

# PATENT ABSTRACTS OF JAPAN

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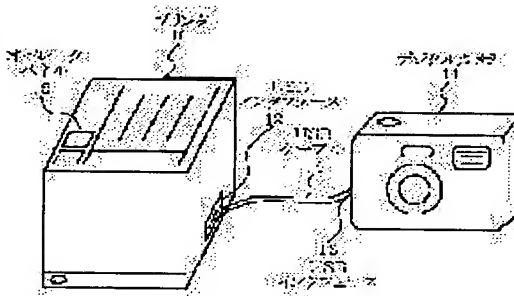
(72)Inventor : OTSU TOMOHIKO

## (54) PRINT SYSTEM

(57)Abstract:

**PROBLEM TO BE SOLVED:** To provide a print system capable of photographing by means of a digital camera corresponding to a key input from the operator panel of a printer and capable of printing, while selecting any one of a photographed image file, an image file photographed by the digital camera in the past and an image file stored in a mass storage.

**SOLUTION:** For this print system, the printer has the USB(universal serial bus) interface of mass storage class, so that the device of mass storage class can be connected and the image file can be directly printed out by the printer.



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**CLAIMS**

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**[Claim(s)]**

[Claim 1] The print system characterized by being able to perform connection of the device of a mass storage class and making an image file as for direct print-out to the aforementioned printer by giving the USB (Universal Serial Bus) interface of a mass storage class to a printer.

[Claim 2] The print system according to claim 1 characterized by having the aforementioned printer characterized by providing the following. In order to connect the aforementioned printer and the aforementioned device of a mass storage class, the USB interface of the aforementioned printer and the USB interface of the aforementioned device are connected by the USB cable, and in the aforementioned USB interface of the aforementioned printer, it is a parallel interface connector. The USB series B plug connector which connects with a host computer and sends data to the aforementioned host computer to the BULK demand from the aforementioned host computer, and an Interrupt (interruption) demand. The operator panel which has the LCD panel which displays the key which is equipped with the USB series A plug connector which connects with the aforementioned device, carries out the same operation as the aforementioned host computer, and advances a demand to the aforementioned device using a BULK demand and an Interrupt demand, and outputs various directions, and the contents of directions.

[Claim 3] The print system according to claim 2 carry out having the aforementioned operator panel of the aforementioned printer which consists of the aforementioned device, the CAPTURE key which issue the directions to the aforementioned device at the time of connection, a LCD panel which display the state of the image file name memorized by the aforementioned device and the aforementioned device, the rise key which scrolls a LCD display upwards and the down key which scrolls a LCD display downward, and a SELECT key which use for selection and the mode selection of an image file as the feature.

[Claim 4] The print system according to claim 1 characterized by the aforementioned device being a digital camera.

[Claim 5] The print system according to claim 1 characterized by the aforementioned device being a removable desk.

[Claim 6] The print system according to claim 1 characterized by the aforementioned device being a hard disk.

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## DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[The technical field to which invention belongs] It is related with the print system characterized by for especially this invention being able to perform photography with a digital camera by the key input from the operator panel of a printer, choosing the photoed image file or the image file photoed in the past with the digital camera, and the image file included in mass storage about a print system, and printing being able to do it.

[0002]

[Description of the Prior Art] As this kind of print system is conventionally shown in JP.11-252489-A, when linking picture photography equipments, such as a digital camera, with a printer directly and transmitting a picture It is not necessary to connect two AC adapters to an electric light line as electric supply to picture photography equipment being possible from a printer side. When it becomes easy to manage the code of the circumference of a power supply and image data is transmitted, the energization to the display means of picture photography equipment is reduced, and a possibility that power supplies may run short is prevented.

[0003] When a digital camera is connected to a printer through a USB (Universal Serial Bus) cable, electric power is supplied by the digital camera through the feeder contained in this USB cable from the printer side to which the AC adapter was connected.

[0004]

[Problem(s) to be Solved by the Invention] The 1st trouble in this conventional print system is possible [print-out ] for a printer only in operator operation from a camera in the print system of the conventional technology.

[0005] The 2nd trouble is that data are not direct made as for print-out to a printer with the conventional technology when a mass storage device is connected.

[0006] The purpose of this invention is to offer the print system characterized by being able to perform photography with a digital camera in the key input from the operator panel of a printer, choosing the photoed image file or the image file photoed in the past with the digital camera, and the image file included in mass storage, and printing being possible.

[0007]

[Means for Solving the Problem] By giving the USB interface of a mass storage class to a printer, connection can do the device of a mass storage class and an image file is made as for direct print-out to the aforementioned printer by the print system of this invention.  
[0008] Moreover, in order that the print system of this invention may connect the aforementioned printer and the aforementioned device of a mass storage class The USB interface of the aforementioned printer and the USB interface of the aforementioned device are connected by the USB cable, to the aforementioned USB interface of the aforementioned printer It connects with a parallel interface connector and a host computer. The BULK demand from the aforementioned host computer, The USB series B plug connector which sends data to the aforementioned device and the same operation as the aforementioned host computer is carried out. A BULK demand, It has the aforementioned printer which is equipped with the USB series A

plug connector which advances a demand to the aforementioned device using an Interrupt demand, and is equipped with the operator panel which has the LCD panel which displays the key which outputs various directions, and the contents of directions.

[0009] Furthermore, the print system of this invention has the aforementioned operator panel of the aforementioned printer which consists of the aforementioned device, the CAPTURE key which issue the directions to the aforementioned device at the time of connection, a LCD panel which display the state of the image file name memorized by the aforementioned device and the aforementioned device, the rise key which scrolls a LCD display upwards and the down key which scrolls a LCD display downward, and a SELECT key which use for selection and the mode selection of an image file.

[0010] Furthermore, the print system of this invention is characterized by the aforementioned device being a digital camera.

[0011] Furthermore, the print system of this invention is characterized by the aforementioned device being a removable desk.

[0012] Furthermore, the print system of this invention is characterized by the aforementioned device being a hard disk.

[0013]

[Embodiments of the Invention] The print system of this invention is characterized by for connection being able to do the device of a mass storage class and making an image file as for direct print-out to a printer by giving the USB interface of a mass storage class to a printer.  
[0014] Next, the gestalt of operation of this invention is explained in detail with reference to a drawing.

[0015] The connection diagram in which drawing 1 shows the gestalt of 1 operation of this invention, drawing in which drawing 2 shows an example of the interface of the printer of this operation gestalt, and drawing 3 are drawings showing an example of the operator panel of the printer of the gestalt of this operation. The composition of the gestalt of this operation is explained with reference to drawing 1, drawing 2, and drawing 3.

[0016] Below, the case where a digital camera is used is described as a device of a mass storage class.

[0017] In order to connect a printer 10 and a digital camera 11, the USB interface 12 of a printer 10 and the USB interface 13 of a digital camera 11 are connected by the USB cable 14.

[0018] The parallel interface connector 20 of the printer interface currently used for the USB interface 12 of a printer from the former, It connects with the personal computer used as a host computer. The data transmission from a host computer, Or the USB series B plug connector 21 which sends data to a host computer to the BULK demand which is a demand of reception, and an Interrupt (interruption) demand, It has the USB series A plug connector 22 which connects with the digital camera 11 equivalent to a device, carries out the same operation as a host computer, and advances a demand to a device using a BULK demand and an Interrupt demand. Furthermore, a printer 10 is equipped with the operator panel 15 which has the LCD (Liquid Crystal Display) panel 34 which displays the keys 30, 31, 32, and 33 which output various directions, and the content of directions.

[0019] The CAPTURE key 30 which issues directions so that the shutter of a digital camera 11 may be turned off, the image file name which is contained in the digital camera 11 and the LCD panel 34 which displays the state of a camera, the rise key 31 which scrolls a LCD display upwards and the down key 32 which scrolls a LCD display downward, and a SELECT key 33 used for selection of an image file and mode selection are consisted of by the operator panel 15 of a printer 10 at the time of a digital camera 11 and connection.

[0020] Drawing 4 is the flow chart of printer operation, and drawing 5 is drawing showing the flow of the signal of a printer and a digital camera. It combines with drawing 1, drawing 2, and drawing 3, and operation of the form of this operation is explained with reference to drawing 4 and drawing 5.

[0021] A printer 10 and a digital camera 11 are connected and it explains from the state of going into the mode in which a printer 10 carries out a direct access to a digital camera 11.

[0022] A digital camera 11 is connected to the USB series A plug connector 22 by the USB

cable 14, and if it goes into the mode which carries out a direct access to a digital camera 11, the LCD panel 34 will display a file name as shown in drawing 3 (S40).

[0023] Next, when it keys by the CAPTURE key 30 which issues directions so that the shutter of the digital camera 11 of the operator panel 15 may be turned off, in a digital camera 11, it is Capture. Command50 is sent. A digital camera 11 performs photography processing 59 (S41). A printer 10 is Status every fixed interval of a certain. Command51 is sent.

[0024] When a digital camera 11 is 60 in an image processing, the status 52 in an image processing is returned to a printer. At the time under image processing, "Processing" is displayed on the LCD panel 34 (S42).

[0025] Status By Command53, when a camera is not 60 in an image processing, the Idle state status 54 is returned to a printer 10. It is recognized as the printer 10 having carried out the image processing to receiving the Idle state status 54, and changes to the LCD panel 34 like drawing 3 at the file name display in a digital camera 11 (S43).

[0026] Next, the operator of a printer chooses an image file by the rise key 31 of a scrolling key and the down key 32 of LCD panel 34 display, pushes the SELECT key, and is Read to a digital camera 11. Command55 is sent. Read Command55 chooses the number of cylinder header selector sector sectors of image data (in order to choose the memory area of a device, constitutionally, a thing of a mass storage device called a cylinder, a header, and a sector exists, it sets to deciding a read-out position with No. 3 of a cylinder, the header of No. 1, and the sector of No. 4, and the read-out size from there is set to a number of cylinders, and decided). A digital camera 11 is ReadCommand to a printer 10, after the image data selection 62 finishes. ACK (Acknowledge)56 is returned (S44). Image data selection processing is automatically performed at the time of the mode which prints immediately the data which photoed this

processing. Next, a printer 10 is Data (as opposed to the port which performs data transfer of USB) to Bulk of USB as an image data demand. Request57 is taken out. A digital camera 11 will be in image data transfer 63 state, and will send image data 58 to a printer 10. It is Read until the selected file is completed. It returns to Command55 and reception of image data is repeated. When the received data are an image file, a printer 10 prints out by changing an image file into the operator panel 15 or the format chosen by default setup from the start at print data (S45). Then, return processing can be continued to S41 and S44. It explains from the state of going into the mode which combines explanation of the form of other operations of operation with drawing 1, drawing 2, and drawing 3, and carries out a direct access using drawing 4 and drawing 5 about connection between a printer 10 and the device (it replaces with the digital camera 11 of drawing 1) of the mass storage class of a USB interface. A device puts a removable disk, a hard disk, etc.

[0027] The device of a mass storage class is connected to the USB series A plug connector 22 by the USB cable 14, and a file name is displayed on the LCD panel 34 like drawing 3. Then, operation of S44 to use is attained. Next, it explains from S44.

[0028] When an image file is chosen and it pushes SELECT key 33 by the rise key 31 of the scrolling key on the operator panel 15 of a printer 10, and the down key 32, it is Read to a mass storage device. Command55 is sent. Read Command55 chooses the number of cylinder header selector sector sectors of data. A mass storage device is Read to a printer 10, after the selection 62 of image data finishes. Command ACK (Acknowledge)56 is returned (S44).

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[0030]

[Effect of the Invention] as explained above, the effect of this invention is that a print system is realizable easily, when connection can do a printer and a digital camera direct and remote operation of a digital camera can perform from a printer the thing which turn off the shutter of a

digital camera and for which photography directions can be issued like, that picture selection in a digital camera can be performed from a printer, and printing out an image file by the bird clapper possible

[0031] Moreover, it is direct connection between a printer and the mass storage device of a USB interface being performed, and file selection being performed from a printer, and enabling possible print-out of printing out the image file of a mass storage device without a personal computer to a printer by the bird clapper of an image file.

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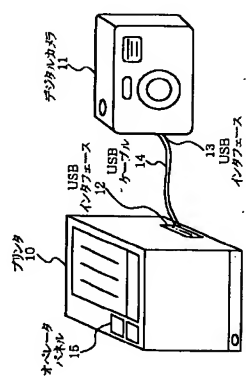
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		A022 A025 A051 A005	

(54) 【発明の名称】 プリントシステム

(57) 【要約】

【課題】 プリンタのオペレータパネルからのキー入力によりデジタルカメラでの撮影ができ、撮影した画像ファイル、または、デジタルカメラで過去に撮影した画像ファイル、マスストレージに入っている画像ファイルを選択して印刷ができることを特徴とするプリントシステムを提供することにある。

【解決手段】 このプリントシステムは、プリンタにマスストレージクラスのUSB (Universal Serial Bus) インタフェースを持たせることにより、マスストレージクラスのデジタルカメラをプリンタにダイレクトプリントアウトができる。



【特許請求の範囲】

【請求項1】 プリンタにマスストレージクラスのUSB (Universal Serial Bus) インタフェースを持たせることにより、マスストレージクラスのデジタルカメラをプリンタにダイレクトプリントアウトができることを特徴とするプリントシステム。

【請求項2】 前記プリンタとマスストレージクラスのデジタルカメラとを接続するために、前記プリンタのUSBインタフェースと前記デジタルカメラのUSBインタフェースとをUSBケーブルで接続し、前記プリンタの前面USBインタフェースには、パラレルインタフェースコネクタと、ホストコンピュータと接続して前記ホストコンピュータからのBULK要求、Interrupt (割り込み) 要求に対してデータを前記ホストコンピュータに送るUSBシリアルBプラグコネクタと、前記デジタルカメラと接続して前記ホストコンピュータと同じ動作をしてBU要求、Interrupt要求を利用するUSBシリアルAプラグコネクタとを備え、各種指示を出力するキーと指示内容を表示するLCDパネルとを有するオペレータパネルを備える前記プリンタを備えることを特徴とする請求項1記載のプリントシステム。

【請求項3】 前記デジタルカメラと接続し、前記デジタルカメラの指示をだすCAPTUREキーと、前記デジタルカメラに記憶されている画像ファイル名及び前記デジタルカメラの状態を表示するLCDパネルと、LCD表示を上にスクロールするアップキーとLCD表示を下にスクロールするダウンキーと、画像ファイルの選択及びキーワード選択に使用するSELECTキーとから構成される前記プリンタの前面オペレータパネルを備えることを特徴とする請求項2記載のプリントシステム。

【請求項4】 前記デジタルカメラがデジタルカメラであることとを特徴とする請求項1記載のプリントシステム。

【請求項5】 前記デジタルカメラがリムーバブルディスクであることを特徴とする請求項1記載のプリントシステム。

【請求項6】 前記デジタルカメラがハードディスクであることを特徴とする請求項1記載のプリントシステム。

【発明の詳細な説明】

【0001】

【発明の属する技術分野】 本発明はプリントシステムに関し、特にプリンタのオペレータパネルからのキー入力によりデジタルカメラでの撮影ができ、撮影した画像ファイル、または、デジタルカメラで過去に撮影した画像ファイル、マスストレージに入っている画像ファイルを選択して印刷ができることを特徴とするプリントシステムに関する。

【0002】

【従来の技術】 従来、この種のプリントシステムは、たとえば特開平11-252489号公報に示されるよう

に、デジタルカメラ等の画像撮影装置をプリンタに接続して画像を転送する時には、プリンタ側から画像撮影装置に給電可能として、電灯線にACアダプタを2つ接続する必要がなく、電源回りのコードの取り回しが簡単となり、また、画像データを転送している時には、画像撮影装置の表示手段への通電を低減して、電源容量が不足する虞れを防止する。

【0003】 デジタルカメラをUSB (Universal Serial Bus) ケーブルを介してプリンタに接続した時に、このUSBケーブルに含まれる給電線を介して、ACアダプタの接続されたプリンタ側からデジタルカメラに給電される。

【0004】

【発明が解決しようとする課題】 この従来のプリントシステムにおける第1の問題点は、従来技術のプリントシステムでは、カメラからのオペレータ動作でしかプリンタにプリントアウトができない、ということである。

【0005】 第2の問題点は、従来技術では、マスストレージクラスのデジタルカメラは、従来技術では、マスストレージクラスのデジタルカメラで過去に撮影した画像ファイルを選択して印刷ができることを特徴とするプリントシステムを提供することにある。

【0006】 本発明の目的は、プリンタのオペレータパネルからのキー入力によりデジタルカメラでの撮影ができ、撮影した画像ファイル、または、デジタルカメラで過去に撮影した画像ファイル、マスストレージに入っている画像ファイルを選択して印刷ができることを特徴とするプリントシステムを提供することにある。

【0007】

【課題を解決するための手段】 本発明のプリントシステムは、プリンタにマスストレージクラスのUSBインタフェースを持たせることにより、マスストレージクラスのデジタルカメラが接続でき、画像ファイルを前記プリンタにダイレクトプリントアウトができる。

【0008】 また、本発明のプリントシステムは、前記プリンタとマスストレージクラスのデジタルカメラとを接続するために、前記プリンタのUSBインタフェースと前記デジタルカメラのUSBインタフェースとをUSBケーブルで接続し、前記プリンタの前面USBインタフェースには、パラレルインタフェースコネクタと、ホストコンピュータと接続して前記ホストコンピュータからのBU要求、Interrupt (割り込み) 要求に対してデータを前記ホストコンピュータに送るUSBシリアルBプラグコネクタと、前記デジタルカメラと接続して前記ホストコンピュータと同じ動作をしてBU要求、Interrupt要求を利用する前記デジタルカメラに要求をだすUSBシリアルAプラグコネクタとを備え、各種指示を出力するキーと指示内容を表示するLCDパネルとを有するオペレータパネルを備える前記プリンタを備える。

【0009】 さらに、本発明のプリントシステムは、前記デジタルカメラと接続し、前記デジタルカメラからのキー入力によりデジタルカメラでの撮影ができ、撮影した画像ファイル、または、デジタルカメラで過去に撮影した画像ファイル、マスストレージに入っている画像ファイルを選択して印刷ができることを特徴とするプリントシステムに関する。

【請求項1】 プリンタにマスストレージクラスのUSB (Universal Serial Bus) インタフェースを持たせることにより、マスストレージクラスのデジタルカメラをプリンタにダイレクトプリントアウトができることを特徴とするプリントシステム。

【請求項2】 前記プリンタとマスストレージクラスのデジタルカメラとを接続するために、前記プリンタのUSBインタフェースと前記デジタルカメラのUSBインタフェースとをUSBケーブルで接続し、前記プリンタの前面USBインタフェースには、パラレルインタフェースコネクタと、ホストコンピュータと接続して前記ホストコンピュータからのBULK要求、Interrupt (割り込み) 要求に対してデータを前記ホストコンピュータに送るUSBシリアルBプラグコネクタと、前記デジタルカメラと接続して前記ホストコンピュータと同じ動作をしてBU要求、Interrupt要求を利用する前記デジタルカメラに要求をだすUSBシリアルAプラグコネクタとを備え、各種指示を出力するキーと指示内容を表示するLCDパネルとを有するオペレータパネルを備える前記プリンタを備える。

【0009】 さらに、本発明のプリントシステムは、前記デジタルカメラと接続し、前記デジタルカメラからのキー入力によりデジタルカメラでの撮影ができ、撮影した画像ファイル、マスストレージに入っている画像ファイルを選択して印刷ができることを特徴とするプリントシステムに関する。





